Ontario

Ministry of Health and Long-Term Care
Public Health Division

Ontario Influenza Bulletin
2006-2007 Season

SURVEILLANCE Week 5 (January 28 – February 3) 2007

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from January 28 – February 3, 2007, (Week 5). The analysis for this issue occurred on Thursday February 8, 2007, therefore all data is current to that date unless otherwise specified.

Influenza activity in Ontario during Week 5, 2007, increased slightly in comparison to the previous week. Seventy-seven sporadically occurring cases of influenza A were reported through iPHIS from health units, while 4 new institutional outbreaks of influenza A were also reported. Toronto reported widespread influenza activity, while Central West, Central East, Eastern, North East, North West and South West regions reported 'localized' influenza activity levels.

For a definition of influenza-like illness (ILI) activity levels and links to websites providing current influenza information from other sources, please refer to the attached Appendix- I. If you would like to provide feedback on the Bulletin, please contact Christine D'Souza (christine.dsouza@moh.gov.on.ca, 416-212-5323) or Anne-Luise Winter (anne-luise.winter@moh.gov.on.ca, 416-327-7301).

Table 1: Summary of laboratory-confirmed influenza cases and institutional influenza outbreaks by health region, January 28 – February 3 (Week 5), 2007.

Lab-confirmed Influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	1	9	1	15	28	11	12	77
Influenza B	0	0	0	0	0	0	0	0
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	1	9	1	15	28	11	12	77
Institutional influenza outbreaks‡	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**4**

SOURCE: MOHLTC [iPHIS, Health Unit Reports to PHD]

* Includes reports of sporadically occurring influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset in the surveillance period.

‡ Laboratory confirmed outbreaks in institutions with onset date of symptoms during the surveillance period.

Table 2: Laboratory Confirmed cases of influenza by health unit & health region, with an episode date† between January 28 – February 3 (Week 5), 2007.

Region	Health Unit	Laboratory Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	1	0	1
	TOTAL NORTH WEST	**1**	**0**	**1**
North East	Algoma	1	0	1
	North Bay Parry Sound District	6	0	6
	Porcupine	0	0	0
	Sudbury & District	2	0	2
	Timiskaming	0	0	0
	TOTAL NORTH EAST	**9**	**0**	**9**
Eastern	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	0	0	0
	Kingston, Frontenac, Lennox & Addington	1	0	1
	Leeds, Grenville & Lanark	0	0	0
	Ottawa	0	0	0
	Renfrew	0	0	0
	TOTAL EASTERN	**1**	**0**	**1**
Central East	Durham Region	0	0	0
	Haliburton, Kawartha, Pine Ridge District	7	0	7
	Peterborough County-City	4	0	4
	Simcoe Muskoka District	0	0	0
	York Region	3	0	3
	Peel Region	1	0	1
	TOTAL CENTRAL EAST	**15**	**0**	**15**
Toronto	Toronto	28	0	28
	TOTAL TORONTO	**28**	**0**	**28**
South West	Grey-Bruce	5	0	5
	Elgin-St. Thomas	0	0	0
	Huron County	0	0	0
	Chatham-Kent	1	0	1
	Lambton	0	0	0
	Middlesex-London	1	0	1
	Oxford	1	0	1
	Perth District	3	0	3
	Windsor-Essex County	0	0	0
	TOTAL SOUTHWEST	**11**	**0**	**11**
Central West	Brant	0	0	0
	Haldimand-Norfolk	0	0	0
	Hamilton	7	0	7
	Niagara Region	0	0	0
	Halton Region	0	0	0
	Waterloo Region	5	0	5
	Wellington-Dufferin-Guelph	0	0	0
	TOTAL CENTRAL WEST	**12**	**0**	**12**
	TOTAL ONTARIO	**77**	**0**	**77**

SOURCE: MOHLTC [iPHIS, Health Unit Reports to PHD]

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Table 3: Cumulative* Laboratory confirmed cases of influenza by health unit & health region with an episode date† between September 1, 2006 – February 3, 2007

Region	Health Unit	Laboratory Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	1	0	1
	Thunder Bay District	6	0	6
	TOTAL NORTH WEST	**7**	**0**	**7**
North East	Algoma	5	0	5
	North Bay Parry Sound District	9	0	9
	Porcupine	0	0	0
	Sudbury & District	6	0	6
	Timiskaming	0	0	0
	TOTAL NORTH EAST	**20**	**0**	**20**
Eastern	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	9	0	9
	Kingston, Frontenac, Lennox & Addington	14	0	14
	Leeds, Grenville & Lanark	2	0	2
	Ottawa	3	0	3
	Renfrew	2	0	2
	TOTAL EASTERN	**30**	**0**	**30**
Central East	Durham Region		0	0
	Haliburton, Kawartha, Pine Ridge District	39	1	40
	Peterborough County-City	17	0	17
	Simcoe Muskoka District	26	0	26
	York Region	36	0	36
	Peel Region	65	1	66
	TOTAL CENTRAL EAST	**183**	**2**	**185**
Toronto	Toronto	181		181
	TOTAL TORONTO	**181**		**181**
South West	Grey-Bruce	34	1	35
	Elgin-St. Thomas	0	0	0
	Huron County	21	0	21
	Chatham-Kent	3	0	3
	Lambton	7	0	7
	Middlesex-London	12	0	12
	Oxford	4	0	4
	Perth District	9	0	9
	Windsor-Essex County	1	0	1
	TOTAL SOUTHWEST	**91**	**1**	**92**
Central West	Brant	3	0	3
	Haldimand-Norfolk	3	0	3
	Hamilton	156	2	158
	Niagara Region	43	0	43
	Halton Region	64	0	64
	Waterloo Region	57	0	57
	Wellington-Dufferin-Guelph	66	0	66
	TOTAL CENTRAL WEST	**392**	**2**	**394**
	TOTAL ONTARIO	**904**	**5**	**909**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Influenza Subtype(s):
During week 5, 3460 isolates were received by the Public Health Agency of Canada, with a total of 368 testing positive for influenza A and 17 for influenza B. The majority of influenza A isolates (172) were from Ontario (46.7%), while 66 (17.9%) were from British Columbia, 39 (10.6%) from Quebec and 38 (10.3%) from Saskatchewan. Six influenza B isolates were from British Columbia (35.3%), 5 (29.4%) were from Ontario, while 4 (23.5%) were from Quebec.*

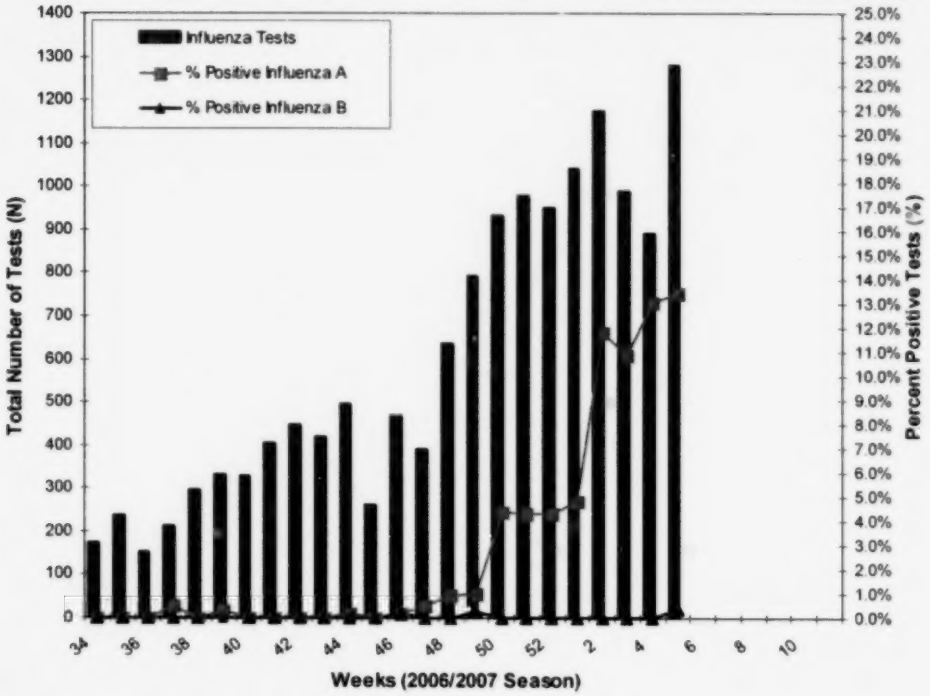
Antigenic Characterization:
The National Microbiology Laboratory (NML) has characterized 206 influenza viruses for the 2006-2007 influenza season: 101 were A/New Caledonia/20/1999(H1N1)-like, 99 were A/Wisconsin/67/05(H3N2)-like, 3 B/Malaysia/2506/2004-like, and 3 B/Shanghai/361/2002-like. All but the B/Shanghai/361/2002-like strain are included in the composition of the 2006-2007 Canadian influenza vaccine. Of the influenza A viruses characterized, 91% of the A(H1N1) viruses were from the West and 84% of the A(H3N2) viruses were from Ontario.**

Antiviral Resistance:
Since the start of the season, the NML has tested 183 influenza A isolates (81 H1N1, 102 H3N2) for amantadine resistance. None of the H1N1 isolates tested were resistant to amantadine; however, 20% (20/102) of the H3N2 isolates were resistant. Of the 170 isolates (167 influenza A, 3 influenza B) tested for oseltamivir resistance, none were found to be resistant.**

Note: Based on the World Health Organization recommendations, Canada's National Advisory Committee on Immunization (NACI) recommended the **2006-2007** influenza vaccine contain an **A/New Caledonia-like**, an **A/Wisconsin-like** & a **B/Malaysia-like** virus strain.

* These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada for week 5, 2007.
** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for week 4, 2007.

Figure 1: Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Infectious Disease Prevention and Control (CIDPC), by report week*.



Source: Public Health Agency of Canada
* Total numbers reported include late reports; therefore totals may not be equal to the sum of the weekly numbers.
Note: Cumulative numbers for season to date are available through FluWatch: http://www.phac-aspc.gc.ca/fluwatch/

Table 4: Institutional respiratory outbreaks in Ontario: New Outbreaks from January 28 – February 3, 2007 (Week 5) and Total Outbreaks from September 1, 2006 – February 3, 2007

Institutional Respiratory Infection Outbreaks		
New Outbreaks* (January 28 - February 3, 2007)	**N**	**% (of outbreaks)**
Influenza A	4	20.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	2	10.0
Other organisms	0	0.0
No organism identified	14	70.0
TOTAL	***20***	***100***
Total Respiratory Infection Outbreaks of the Season to date (Sep. 1, 2006 – Feb. 3, 2007)**	**N**	**% (of outbreaks)**
Influenza A	52	12.2
Influenza B	1	0.2
Enterovirus	11	2.6
Parainfluenza (All types)	18	4.2
RSV	55	12.9
Rhinovirus	14	3.3
No organism identified	274	64.5
TOTAL	***425***	***100***
Types of Institutions (All Outbreaks) **†	**N**	**% (of outbreaks)**
Long-Term Care Homes	293	68.9
Hospitals	25	5.9
Retirement Homes	39	9.2
Other	1	0.2
Unknown	67	15.8
TOTAL	***425***	***100***
Outbreak Related Complications (All Outbreaks) **	**N**	**% (of total cases)**
Total Cases		
Residents	4082	68.0
Patients	492	8.2
Staff	1423	23.7
Total Cases	**6006**	**100**
Deaths		**% (of cases per role)**
Residents	75	1.8
Patients	6	1.2
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	139	3.4
Patients	7	1.4
Staff	5	0.4
Hospitalizations		**% (of cases per role)**
Residents	146	3.6
Staff	1	0.1

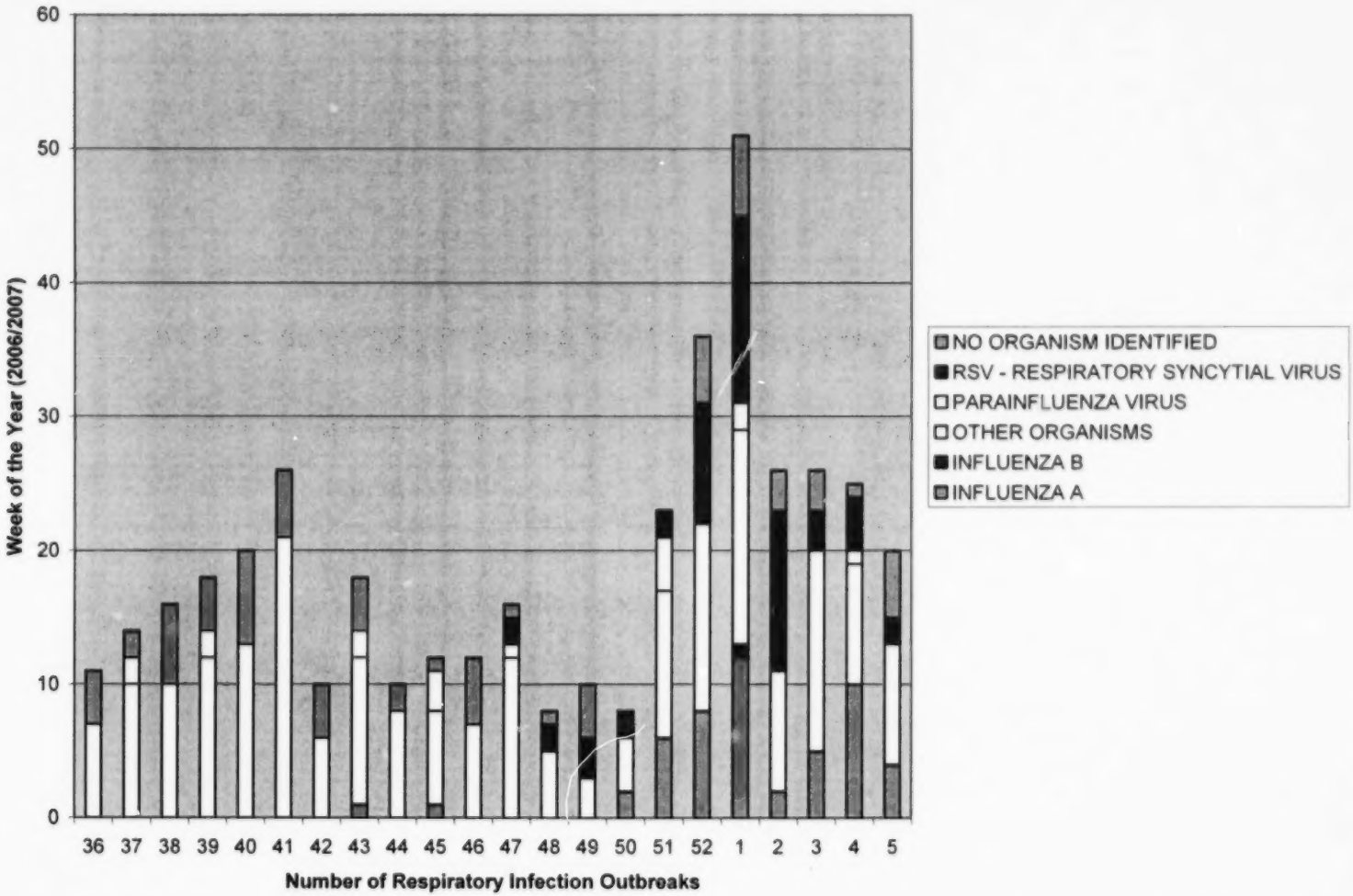
SOURCE: MOHLTC: iPHIS Outbreak Summary

* New outbreaks are those in which the date of onset of illness in the first case occurred and recorded through iPHIS in the current surveillance period; i.e. January 28 – February 3, 2007

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – February 3, 2007

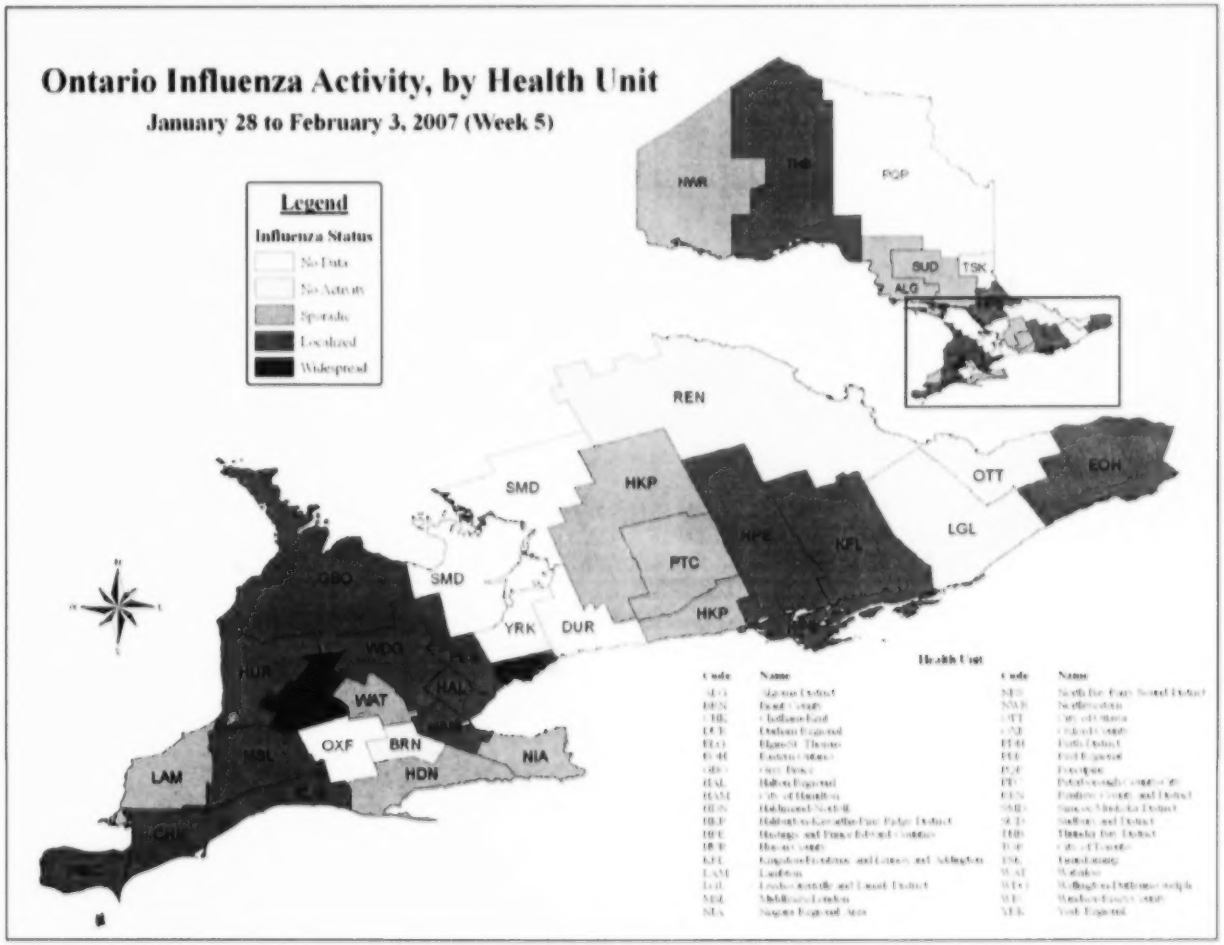
† The change in numbers between week 4 and week 5 is due to an update that fixed an error in the reporting tool (CRN)

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2006 – February 3, 2007* by causative organism



* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2006 – February 3, 2007

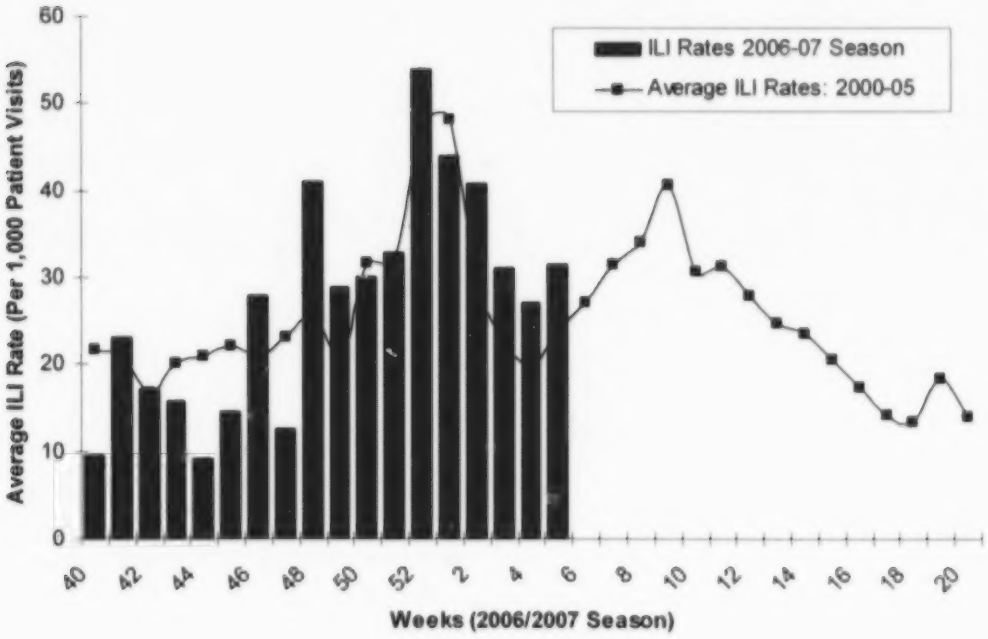
Figure 3: Influenza Activity* levels in Ontario by health unit & health region for Week 5, January 28 – February 3, 2007.



SOURCE: MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional outbreaks. Please refer to detailed definitions for the 2006-2007 season included in the Appendix-1]

Figure 4: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2006- 2007 season, by report week, Compared to Ontario average† (1999/2000 to 2004/05 seasons).



Source: Public Health Agency of Canada

* Sentinel physician information is reported to Public Health Agency of Canada.

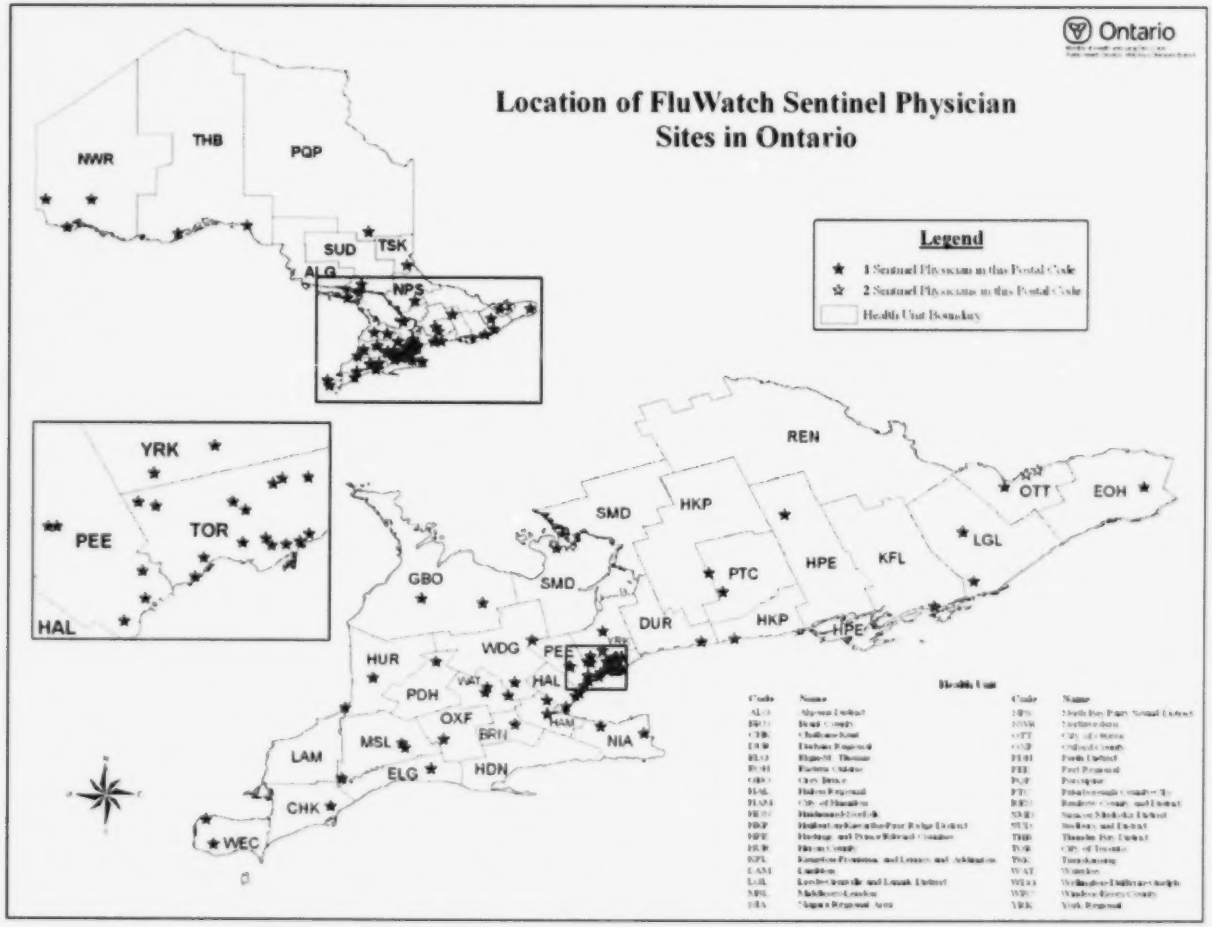
†No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.

Table 5: Average Influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 5.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	0	2	0	0
K1L8H2	0	0	1	1	0
K2L3C8	0	0	0	0	0
K2P1V3	0	0	0	0	0
K1J9M2	0	0	0	0	0
K2P1V3	0	0	1	0	0
K0H2N0	1	3	0	0	0
K7H2W6	0	0	0	0	0
K7L1E9	0	1	0	0	0
K0L1C0	0	0	0	0	0
L1A3W4	0	0	0	1	0
K0L1H0	0	0	0	0	0
K0M1A0	0	0	0	0	0
L1B1H8	0	0	0	0	0
L4L4Y7	0	0	0	0	0
L4J7Y3	0	0	0	0	0
M5M1B2	0	0	0	0	0
M4X1W4	0	0	0	0	0
M6G4A1	0	0	0	0	0
M4E1V8	0	1	0	0	0
M2N6H7	0	0	0	0	0
M2J2Z1	0	0	0	0	0
M3H1T1	0	0	1	0	0
M2K1E1	0	0	0	0	0
M9W4L6	1	0	1	0	0
M8V2Z5	0	0	0	0	0
L5J2W4	0	0	0	0	0
L4Y2N8	0	1	1	0	0
L6W2A4	2	1	1	0	0
L6V4H6	0	0	2	0	0
L9W1G2	0	0	1	0	0
L6L2X4	0	0	0	0	0
L6L1X8	0	1	0	0	0
L7R1M6	0	0	0	0	0
L9H1V1	0	1	0	0	0
L9K2G2	0	0	0	0	0
L0R1H0	0	0	0	0	0
L2E1Y3	0	0	0	0	0
N3R7K8	0	0	0	0	0
N3C2E2	0	0	0	0	0
N2G1P2	0	0	0	0	0
N2M3B5	0	1	0	0	0
N4W1P9	0	0	0	0	0
N5H1K9	0	0	0	0	0
N0P2C0	0	0	0	0	0
N8X2G3	0	0	6	1	0
N0M1T0	0	0	0	0	0
N6A5R9	0	0	0	0	0
N6C2R5	0	0	0	0	0
N0M1L0	2	1	0	0	0
N0G1L0	0	0	1	0	0
N0C1E0	0	0	0	0	0
L4R4P4	0	0	0	0	0
P0A1C0	0	0	0	0	0
P0P1S0	0	0	0	1	0
P0M2L0	0	0	2	0	0
P4N1C6	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0T2E0	0	1	3	0	0
P0W1E0	0	0	0	1	0
ILI Sum	6	12	23	5	0
ILI Consultation Rate (per 1,000 patient visits)	54.55	88.89	26.71	14.08	0.00

Source: Public Health Agency of Canada
* Sentinel physician information is reported to the Public Health Agency of Canada
Note: The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly.

Figure 5: Geographic Distribution of Sentinel Physicians in Ontario



Source: National Research System (NaReS), College of Family Physicians of Canada

* Sentinel physician information is reported to the Public Health Agency of Canada

FURTHER INFORMATION

1. Ontario Ministry of Health and Long-Term Care
   Previous issues of the *Ontario Influenza Bulletin* can be accessed at:
   http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_05/flubul_mn.html

2. Public Health Agency of Canada
   Issues of FluWatch can be accessed at:
   www.phac-aspc.gc.ca/fluwatch/

3. United States Centers for Disease Control and Prevention
   www.cdc.gov/flu/

INFORMATION ABOUT AVIAN INFLUENZA

For latest information on the status of avian influenza worldwide please use the following link:

Public Health Agency of Canada
http://www.phac-aspc.gc.ca/h5n1/index.html

APPENDIX - I

Definitions for influenza activity levels:

No Data: No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period.

No Activity: No laboratory confirmed* influenza cases(s) or outbreak detected during the past four weeks within the influenza surveillance region, however, sporadically occurring **ILI** may be reported†

Sporadic: Sporadically occurring **ILI and laboratory confirmed influenza* case(s) with NO outbreaks** detected within the influenza surveillance region†

Localized: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in less than 50% of the influenza surveillance region(s)**†

Widespread: sporadically occurring **ILI and laboratory confirmed influenza* case(s) together with outbreaks of ILI** in schools and/or worksites or laboratory confirmed influenza in residential institutions occurring **in greater than or equal to 50% of the influenza surveillance region(s)**†

* Confirmation of influenza within the surveillance region at any time within the prior week
† Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

Influenza-Like Illness (ILI) Definitions:

A) ILI in the general population:

Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

B) ILI/Influenza outbreaks:

Schools and work sites: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case**.

Influenza Surveillance Weeks 2006-2007 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
6	4-Feb-07	10-Feb-07	13-Feb-07
7	11-Feb-07	17-Feb-07	20-Feb-07
8	18-Feb-07	24-Feb-07	27-Feb-07
9	25-Feb-07	3-Mar-07	6-Mar-07
10	4-Mar-07	10-Mar-07	13-Mar-07
11	11-Mar-07	17-Mar-07	20-Mar-07
12	18-Mar-07	24-Mar-07	27-Mar-07
13	25-Mar-07	31-Mar-07	3-Apr-07
14	1-Apr-07	7-Apr-07	10-Apr-07
15	8-Apr-07	14-Apr-07	17-Apr-07
16	15-Apr-07	21-Apr-07	24-Apr-07
17	22-Apr-07	28-Apr-07	1-May-07
18	29-Apr-07	5-May-07	8-May-07
19	6-May-07	12-May-07	15-May-07
20	13-May-07	19-May-07	22-May-07
21	20-May-07	26-May-07	29-Jun-07
22	27-May-07	2-Jun-07	5-Jun-07
23	3-Jun-07	9-Jun-07	12-Jun-07
24	10-Jun-07	16-Jun-07	19-Jun-07
25	17-Jun-07	23-Jun-07	26-Jun-07
26	24-Jun-07	30-Jun-07	3-Jul-07
27	1-Jul-07	7-Jul-07	10-Jul-07
28	8-Jul-07	14-Jul-07	17-Jul-07
29	15-Jul-07	21-Jul-07	24-Jul-07
30	22-Jul-07	28-Jul-07	31-Aug-07
31	29-Jul-07	4-Aug-07	7-Aug-07
32	5-Aug-07	11-Aug-07	14-Aug-07
33	12-Aug-07	18-Aug-07	21-Aug-07
34	19-Aug-07	25-Aug-07	28-Sep-07
35	26-Aug-07	1-Sep-07	4-Sep-07